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The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 23

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte NATALIE GIROUX
and BEN BACQUE

Appeal No. 2004-1683
Application 09/199,786[1]

ON BRIEF

Before KRASS, BARRETT, and LEVY, Administrative Patent Judges.

BARRETT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) from the final rejection of claims 1-24.

We reverse.

[1] Application for patent filed November 25, 1998, entitled "Controlling ATM Layer Transfer Characteristics Based on Physical Layer Dynamic Rate," which claims the foreign filing priority benefit under 35 U.S.C. § 119 of Canadian Application 2222934, filed November 28, 1997, and Canadian Application 2240596, filed June 12, 1998.

BACKGROUND

The invention relates to communications service over an asynchronous transfer mode (ATM) network which includes an ATM layer and a physical layer link (such as a copper local loop) having a "transport rate" which is subject to variation as a function of time. The invention manages the transmission of data traffic by monitoring the physical layer transport rate of the transmission link and sending to the source end point a management cell including rate information based on the measured physical layer transfer rate.

Claim 1 is reproduced below.

> 1. In a communications system for transporting data traffic downstream from an upstream source over a path which includes a transmission link having a physical layer transport rate which is subject to variations as a function of time due to actual conditions of the transmission link itself, temperature variations and/or electromagnetic interference, a method of managing transmission of the data traffic through the system, the method comprising: the steps of: monitoring the instantaneous physical layer transport rate of said transmission link; sending to said upstream source a management message including rate information based on the monitored instantaneous physical layer transport rate; and adjusting, by said upstream source, said transmission rate responsive to the rate information in said management message in advance of the onset of congestion and cell loss.

THE REFERENCES

The examiner relies on the following references:

Meurisse et al. (Meurisse) 5,959,973 September 28, 1999

Chang et al. (Chang), Study of the Interoperability between EFCI and ER Switch Mechanisms for ABR Traffic in an ATM Network, Computer Communications and Networks, 1995 Proceedings, Fourth International Conference on, 20-23 Sept. 1995, pages 310 - 315.

THE REJECTIONS

Claims 1 and 7 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Meurisse.

Claims 2-5, 8, 9, 11, 13, and 22-24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Meurisse.

Claims 6, 10, 12, 14, and 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Meurisse and Chang.

Claims 15-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Meurisse and Chang and admitted prior art (APA) that xDSL and ADSL were well known in the art at page 3, lines 12-25 of the specification.

We refer to the final rejection (Paper No. 15) (pages referred to as "FR__") and the examiner's answer (Paper No. 18) for a statement of the examiner's rejection, and to the brief (Paper No. 17) (pages referred to as "Br__") and reply brief (Paper No. 20) (pages referred to as "RBr__") for a statement of appellants' arguments thereagainst.

OPINION

Anticipation

Rejection and arguments

Method claim 1 is representative. Claim 7 is the system version in means-plus-function format.

The examiner finds that Meurisse discloses "monitoring an actual packet rate of data transmitted over the connection" (FR2), calculating an upper packet rate value and sending this value to the source terminal, and maintaining the data flow rate at the source terminal below the upper packet rate value (FR2).

Appellants argue that Meurisse does not disclose, in a communications system having a "path which includes a transmission link having a physical layer transport rate which is subject to variations as a function of time due to actual conditions of the transmission link itself, temperature variations and/or electromagnetic interference," the step of "monitoring the instantaneous physical layer transport rate of said transmission link" (claim 1). It is argued that the measurement at the queuing network node Q in Meurisse does not appear to be affected or influenced by actual conditions of the transmission link itself (Br7) and there is no hint of changes in the physical layer affecting the transport rate of the transmission link (Br8). Appellants acknowledge that it may well be true that every transmission link inherently has a physical

layer transport rate that is subject to variations, but "there is nothing in Meurisse et al. that would provide any teaching or suggestion on how to deal with any variation in the physical layer transport rate" (Br8) and "no teaching or suggestion that the resource management cells carry information relevant to the physical layer transport rate or that they report any abrupt change or interruption in the transport rate" (Br8). Thus, it is argued, Meurisse fails to teach all of the steps and functions of claims 1 and 7 (Br9).

The examiner states (EA10):

> The inventive concept of the claimed invention involves measurement of a rate. This is exactly what Meurisse et al. measures. Appellants argue that the intended use is for measuring variations in rate due to actual conditions of the transmission link itself, temperature variations and/or electromagnetic interference. But this intended use is not the inventive concept itself, which is measurement of a rate.

Appellants reply that the claims do not recite just any "rate," but a specific data transport rate and this is not an "intended use"

The examiner also states that "Meurisse et al. measures the packet rate, and the packet rate inherently depends on conditions of the transmission link itself, temperature variations and/or electromagnetic interference" (EA10).

Analysis

This case turns on a question of claim interpretation of the term "transport rate," which is unfortunately not explicitly addressed by the examiner or appellants. It is assumed that Meurisse discloses a "path which includes a transmission link having a physical layer transport rate which is subject to variations as a function of time due to actual conditions of the transmission link itself, temperature variations and/or electromagnetic interference," since this appears to be an inherent characteristic of all links.

"Transport rate," read without reference to the claim or specification, broadly refers to a quantity per unit time being transported. The examiner's rejection is impliedly based on the finding that the packet rate at the connections passing through the queuing network (Q) in Meurisse is the same thing as "monitoring the instantaneous physical layer transport rate of said transmission link" because both measure a transmit rate. The examiner finds that the packet rate inherently depends on conditions of the link itself. However, we understand "transport rate" to have a more limited meaning. Claim 1 states that the "transport rate ... is subject to variations as a function of time due to actual conditions of the transmission link itself, temperature variations and/or electromagnetic interference"; thus, a "transport rate" has this characteristic. The

specification expressly defines that "transport rate ... represents the peak cell rate which the system can accommodate at that time" (page 13, lines 6-7), where we interpret "at that time" to refer to an "instantaneous" value. This definition is consistent with discussions in the specification which indicate that the "transport rate" is the maximum or peak usable capacity of the transmission link at the time. For example, the specification discusses "attempts to increase the physical layer transfer rate, otherwise referred to herein as the transport rate" (page 2, lines 6-8); "technologies which will improve transport rate" (page 2, line 16); the fact that the "transport rate ... is known to vary due to physical conditions of the local loop" (page 3, lines 8-9); and "conventional xDSL termination units, also commonly referred to as xDSL modems, are equipped with dynamic rate adaptation functionality whereby the modem dynamically adjusts its transmission rate according to the measured physical characteristics (i.e., usable transport rate) of the loop" (page 3, lines 12-17). Manifestly, the only rate that varies as a function of conditions is the maximum cell rate.

We disagree with the examiner's finding that the packet rate is the same as the instantaneous transport rate. The packet rate is not the peak cell rate which the system can accommodate at that time, but is merely the rate than happens to be going through the system at that time. The packet rate may, at times,

be equal to the instantaneous transport rate, but this is not necessarily so, e.g., the packet rate may be 10 Mbits/s but the transport rate (the maximum transfer rate of the link) may be 20 Mbits/s. Furthermore, the packet rate does not inherently depend on the conditions of the link itself, e.g., if the packet rate is less than the "transport rate" (the peak cell rate) it will be unaffected by the condition of the link. It is only when the "transport rate" is interpreted to be the peak transfer rate at the time does it make any sense to say the transport rate is a function of the actual conditions of the link. Therefore, we find that Meurisse does not teach "monitoring the instantaneous physical layer transport rate of said transmission link," and, consequently, it also does not teach the "sending" and "adjusting" steps. The rejection of claims 1 and 7 is reversed.

Obviousness

Meurisse -claims 2-5, 8, 9, 11, 13, and 22-24

The rejection of dependent claims 2-5, 8, 9, and 22-24 is reversed because the obviousness rejection does not cure the deficiencies of Meurisse with respect to claims 1 and 7.

Independent claim 11 recites "continually monitoring the instantaneous physical layer transport rate of said transmission link" which limitation is not taught or suggested by Meurisse as discussed in connection with claim 1. The rejection of claim 11 is reversed.

Independent claim 13 recites "monitoring means for monitoring the physical layer transport rate of said link." Claim 13 does not include the term "instantaneous" and recites a "link" rather than a "transmission link," but is otherwise the same as the language in claim 1. Our decision regarding claim 1 did not depend on the "instantaneous" language and it is clear that the link must be a transmission link. The limitations of claim 13 are not taught or suggested by Meurisse as discussed in connection with claim 1. The rejection of claim 13 is reversed.

Meurisse and Clark - claims 6, 10, 12, 14, and 21

Independent claim 14 recites "monitoring the physical layer transport rate of said physical layer transmission link" which is essentially the same limitation we determined was not taught or suggested by Meurisse as discussed in connection with claim 1. Independent claim 21 recites "monitoring means associated with said transmission link to monitor transport rate capability of said transmission link" which is essentially the same limitation we determined was not taught or suggested by Meurisse as discussed in connection with claim 1. The examiner applies Chang to teach a rate-based flow control mechanism in ATM networks that controls the transmission rate of ABR traffic sources based on feedback information contained in RM cells coming from the destination node and concludes that it would have been obvious to modify Meurisse so that the feedback information is contained in

RM cells (FR6-7). Chang does not cure the deficiencies of Meurisse with respect to the term "transport rate" in independent claims 1, 7, 11, 14 and 21. Therefore, the rejection of claims 6, 10, 12, 14, and 21 is reversed.

Meurisse, Clark, and APA - claims 15-20

The examiner relies on the APA that xDSL and ADSL were well known in the art at page 3, lines 12-25 of the specification. This does not cure the deficiencies of Meurisse with respect to the term "transport rate" in independent claim 14. Therefore, the rejection of dependent claims 15-20 is reversed.

CONCLUSION

The rejections of claims 1-24 are reversed.

REVERSED

ERROL A. KRASS
Administrative Patent Judge

LEE E. BARRETT
Administrative Patent Judge

STUART S. LEVY
Administrative Patent Judge

BOARD OF PATENT APPEALS AND INTERFERENCES

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